

No.



201300176

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Syngenta Crop Protection AG

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

An application requesting a certificate of protection for an alleged distinct variety of sexually reproduced, or tuber propagated plant, the name and description of which are contained in the application and exhibits, a copy of which is hereunto annexed and made a part hereof, and the various requirements of LAW in such cases made and provided have been complied with, and the title thereto is, from the records of the PLANT VARIETY PROTECTION OFFICE, in the applicant(s) indicated in the said copy, and Whereas, upon due examination made, the said applicant(s) is (are) adjudged to be entitled to a certificate of plant variety protection under the LAW.

Now, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of TWENTY years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety therefrom, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN, FIELD

'MFX7805'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of March, in the year two thousand and fifteen.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE <i>(Instructions and information collection burden statement on reverse)</i>		The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995. Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).	
1. NAME OF OWNER Syngenta Crop Protection AG		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) Schwarzwaldallee 215 Basel, Switzerland 4058		3. VARIETY NAME MFx7805	
5. TELEPHONE (include area code) +41 61 323 11 11		FOR OFFICIAL USE ONLY VPVO NUMBER <div style="font-size: 2em; font-weight: bold;">201300176</div> FILING DATE <div style="font-size: 1.2em;">February 28, 2013</div>	
6. FAX (include area code) +41 61 323 12 12			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation	8. IF INCORPORATED, GIVE STATE OF INCORPORATION Swiss	9. DATE OF INCORPORATION December 3, 1996	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Attn: Leah Houg Dwight Bostwick Syngenta Seeds Inc 2369 330th St. Slater, IA 50244		FILING AND EXAMINATION FEES: <div style="font-size: 1.2em;">\$ 4382.00</div> DATE 2/28/2013 CERTIFICATION FEE: <div style="font-size: 1.2em;">\$</div> DATE	
11. TELEPHONE (Include area code) (515) 685-5258	12. FAX (Include area code) (515) 685-5080	13. E-MAIL leah.houg@syngenta.com, dwight.bostwick@syngenta.com	
14. CROP KIND (Common Name) Corn	16. FAMILY NAME (Botanical) Gramineae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION. _____	
15. GENUS AND SPECIES NAME OF CROP Zea Mays	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="radio"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="radio"/> NO (If "no", go to item 23) <input type="radio"/> UNDECIDED	
		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED <i>(If additional explanation is necessary, please use the space indicated on the reverse.)</i>	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Dwight Bostwick		NAME (Please print or type)	
CAPACITY OR TITLE Head NAFTA Breeding Projects-Corn	DATE 2-25-13	CAPACITY OR TITLE	DATE

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (*See Section 97.6 of the Regulations and Rules of Practice*). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (*See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.*)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, Seed Regulatory and Testing Branch, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
 (2) the details of subsequent stages of selection and multiplication;
 (3) evidence of uniformity and stability; and
 (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (*See Regulations and Rules of Practice, Section 97.103.*)
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (*Please provide a statement as to the limitation and sequence of generations that may be certified.*)

23. CONTINUED FROM FRONT (*Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.*)
 January, 2013

24. CONTINUED FROM FRONT (*Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).*)

RAD
6/23/2014

US utility patent application 13/78505 filed 2/27/2013

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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Syngenta Crop Protection AG
MFX7805
Exhibit A

Origin and Breeding History of Corn Inbred Line MFX7805

The corn Inbred line MFX7805 was developed from Syngenta inbred line NP2739 (US Patent (US Patent 7,390,944) and Syngenta inbred line FX7082. NP2739 was developed from inbred line NPXD6005 and inbred line G3601 (US Patent 6,849,790). NPXD6005 is an inbred line derived from self-pollination of commercial F1 hybrid Pioneer Brand 3563. Inbred line G3601 was developed from ZS0560 (PVP certificate 9400256 and US Patent 5,585,533) and commercial F1 hybrid Pioneer Brand 3394. FX7082 was developed from Syngenta inbred line G3601 (US Patent 6,849,790) and Syngenta inbred line G1103 (US Patent 6,984,779). Inbred line G1103 was developed from Syngenta inbreds ZS0560 (PVP certificate 9400256 and US Patent 5,585,533) and ZS1202 (PVP certificate 9500297 and US Patent 5,602,315).

After the initial cross, the breeding methods used were mass selection, and simple ear to row selection for the development of inbred line inbred line MFX7805.

The chronology of inbreeding is given below:

Summer 2004 Weldon, IL	Initial cross made to create F1 population
Winter 2004 Kunia, Oahu Hawaii	F1 population self-pollinated to produce F2 population
Summer 2005 Clinton, IL	F2 population self-pollinated to produce F3 population
Winter 2005 Salinas, Puerto Rico	F3 populations self-pollinated to produce F4 families
Summer 2007 Clinton, IL	F4 families self-pollinated to produce F5 families
Summer 2008 Clinton, IL	F5 families self-pollinated to produce F6 lines
Winter 2008 Santa Isabel, Argentina	F6 lines self-pollinated to produce F7 lines
Summer 2009 Clinton, IL	F7 lines self-pollinated to produce F8 Lines
Winter 2009 Arica, Chile	Line self-pollinated and ears bulked to produce Breeder's Seed for inbred line MFX7805.

Selection criteria used during the inbred evaluation process included synchronous male and female flowering, plant health, ear fill, pre-harvest intactness and resistance to various stalk rots. Plants within each generation were also closely evaluated for uniformity of plant and ear height. Selection was also done for general and specific combining ability for yield in hybrid combinations across several inbreds.

From 2010 to the present, the inbred line has been observed in Clinton, IL and other locations. No phenotypic or isozymic variants have been observed. MFX7805 has been uniform and stable for at least 4 generations.

Exhibit B
Syngenta Crop Protection AG
MFX7805

Statement of Distinctness

The corn inbred line MFX7805 is most similar to Elite Syngenta Inbred line NP2739, US Patent 7,390,944. Comparisons of the inbred lines were conducted at the Slater, IA Syngenta Seeds, Inc. station and a location near Marshalltown, IA in 2012.

Inbred line MFX7805 differs from elite Syngenta inbred line NP2739 in the number of lateral Tassel Branches (that originate from the central spike). See supporting data in Table 1 below.

MFX7805 is a distinct and unique line.

Table 1. Summary of differences in Number of Lateral Tassel Branches (that originate from the central spike) between inbred line MFX7805 and elite Syngenta inbred line NP2739. T test done using two sample test at 95% confidence interval; using S-PLUS® 6.2 for Windows STANDARD EDITION.

Trait	Line A	Line B	Planting date/Location	Count A	Count B	Mean A	Mean B	Mean diff.	Std Dev A	Std Dev B	P value	T test
Number of Lateral Tassel Branches	MFX7805	NP2739	Slater, IA 5/11/2012	15	20	5.6	2.0	3.6	1.3	0.5	0	11.489
Number of Lateral Tassel Branches	MFX7805	NP2739	Marshalltown, IA 5/8/2012	25	25	6.3	1.9	4.4	0.6	1.3	0	15.674

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved OMB NO 0581-0055

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To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

Exhibit C

**OBJECTIVE DESCRIPTION OF VARIETY
Com (Zea mays L.)**

NAME OF APPLICANT (S) Syngenta Crop Protection AG	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME MFX7805
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) Schwarzwaldallee 215, Basel Switzerland 4058		FOR OFFICIAL USE ONLY PVPO NUMBER

In the spaces on the left, enter the appropriate numbers that describe the characteristics of the application variety. On the right, enter the appropriate numbers that describe the characteristics of the most similar comparison variety. Right justify whole numbers by adding leading zeros if necessary. The variety that you choose for comparison should be the most similar one in terms of overall morphology, background, genetics, and maturity.

In general, for this form, measurements of quantitative traits should be taken in **one trial** on **15-25 randomly selected plants** to obtain averages and statistics that describe a typical field of the variety. Trials should be done preferably in one location, with replicates, in the region of best adaptability (where the variety will grow and perform to its best potential). Trials should include the application variety plus all comparison varieties.

At least one year of trials should be conducted within the United States of America. (Form technical content last updated Dec. 2008.)

The following historical STANDARD INBRED LINES are available from the North Central Regional Plant Introduction Station in Ames, Iowa. They have been well characterized and may be used as comparison varieties. If used, then use the most similar (in background and maturity) of these to make comparisons based on growout trial data.

Yellow Dent Families:

Family	Members
B14	CM105, A632, B64, B68
B37	B37, B76, H84
B73	N192, A679, B73, NC268
C103	Mo17, Va102, Va35, A682
Oh43	A619, MS71, H99, Va26
WF9	W64A, A554, A654, Pa91

Yellow Dent (Unrelated):

Co109, ND246
Oh7, T232
W117, W153R
W182BN

White Dent:

C166, H105, Ky228

Sweet Corn:

C13, Iowa5125, P39, 2132

Popcorn:

SG1533, 4722, HP301, HP7211

Pipecorn:

Mo15W, Mo16W, Mo24W

Describe the Region of Best Adaptability, trial set-up, and the environmental conditions (including monthly temperatures and rainfall) during the trial (continue in Comment Section).

Trial type was Randomized Complete Block Trial design. Trial location used for comparison was at the Syngenta Seeds Slater, IA location and planted 5/5/2012. The trial was irrigated with an inch of water twice in July and once in August.

Monthly Temp ave High, Monthly Temp ave. Low, Monthly rainfall-May 79.3F, 55.4F, 1.9in., ;June-, 83.7F, 63.1F, 2.7in., ;July-, 92.9F, 69.3F, 3.1in., ;Aug-, 84.7F, 60.5F, 4.3in., ;Sept-, 77.8F, 50.9F, 3.1in.

1. TYPE: <u> 0 5 </u> 1 = Flint 2 = Flint-like 3 = Intermediate 4 = Dent-like 5 = Dent		Comparison Variety Name: <u> NP2739 </u> <u> 0 5 </u> Type	
2. MATURITY (In Region Best Adaptability: show Heat Unit Formula in Comments section):			
DAYS <u> 072.0 </u>	HEAT UNITS <u> 1478.0 </u> From planting to 50% of plants in silk	DAYS <u> 074.5 </u>	HEAT UNITS <u> 1533.0 </u> 50% Silk
<u> 074.0 </u>	<u> 1522.0 </u> From planting to 50% of plants in pollen	<u> 074.0 </u>	<u> 1522.0 </u> 50% Pollen
Application Variety Data		Comparison Variety Data	

Application Variety Data				Comparison Variety Data			
MFX7805				NP2739			
3. PLANT:				Mean			
Standard Deviation				Standard Deviation			
Sample Size				Sample Size			
217.6	cm Plant Height (to tassel tip)	4.6	25	238.5	cm Plant Height	8.0	20
081.7	cm Ear Height (to base of top ear node)	5.5	25	087.2	cm Ear Height	10.1	20
012.8	cm Length of Top Ear Internode	1.5	25	013.1	cm Internode	1.0	20
3	Anthocyanin of Brace Roots (when brace roots are green with some red or purple anthocyanin in stripes or speckles, rate the shade of anthocyanin) 1 = Absent (Green) 3 = Weak (Pink) 5 = Medium (Light red; Light red/purple) 7 = Strong (Red; Red/purple) 9 = Very Strong (Dark red/purple)			3	Brace Root Anthocyanin		
4. LEAF:				Mean			
Standard Deviation				Standard Deviation			
Sample Size				Sample Size			
008.8	cm Width of Ear Node Leaf	0.5	25	009.1	cm Leaf Width	0.9	20
074.9	cm Length of Ear Node Leaf	2.2	25	077.0	cm Leaf Length	3.2	20
1	Leaf Attitude from main stem to tip of leaf (see UPOV diagrams) 1 = Erect 3 = Horizontal 5 = Drooping			1	Leaf Attitude		
3	Pubescence on margin/edge of leaf sheath (Rate on scale from 1 = none to 9 = like peach fuzz)			7	Pubescence on margin/edge of leaf sheath		
5. TASSEL:				Mean			
Standard Deviation				Standard Deviation			
Sample Size				Sample Size			
05.6	Number of Primary Lateral Branches	1.3	15	02.0	No. Tassel Branches	0.5	20
35.9	cm Tassel Length (From top node below flag leaf to tassel tip)	3.0	15	36.7	cm Tassel Length	3.0	20
13.5	cm Tassel Peduncle Length (From top node below flag leaf to bottom tassel branch)	3.1	15	13.4	cm Peduncle Length	2.5	20
15.0	cm Tassel Central Spike Length (From top tassel branch to tassel tip)	3.0	15	18.0	cm Central Spike Len	2.8	20
1	Branch Attitude from Central Spike from main spike to tip of tassel branch (see UPOV diagrams): 1 = Erect 3 = Horizontal 5 = Drooping			1	Tassel Branch Attitude		
3	Anther Color (2-3 days after being exposed to allow for sun reddening effects) 1 = Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3 = Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5 = Red (ex. Munsell 2.5R 4/8) 7 = Dark Red (ex. Munsell 10RP 4/8) 9 = Purple (ex. Munsell 5RP 5/8)			3	Anther Color		
2.5YR6/6				2.5YR6/6			
1&9	Glume Color (on the top 2/3 of the glume) 1 = Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3 = Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5 = Red (ex. Munsell 2.5R 4/8) 7 = Dark Red (ex. Munsell 10RP 4/8) 9 = Purple (ex. Munsell 5RP 5/8)			1&9	Glume Color		
5GY5/6 AND 5RP4/4				5GY7/6 AND 5RP3/6			
Absent	Bar Glume Anthocyanin Color (on the bottom 1/3 of glume; see UPOV Diagram; Note: the bar glume is listed as "present" if it is present and the ring is at least 50% closed) 1 = Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3 = Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5 = Red (ex. Munsell 2.5R 4/8) 7 = Dark Red (ex. Munsell 10RP 4/8) 9 = Purple (ex. Munsell 5RP 5/8)			Absent	Bar Glume Anthocyanin Color		
Application Variety Data				Comparison Variety Data			

Application Variety Data			Comparison Variety Data		
MFX7805			NP2739		
6a. EAR (Unhusked Data):			Mean		
Standard Deviation	Sample Size		Standard Deviation	Sample Size	
6.8	45	cm Husk Extension (at harvest)	3.7	30	cm Husk Extension
23.3	45	cm Husk Leaf Length	19.9	30	cm Husk Leaf Length
1 Silk Color (2-3 days after emergence to allow for sun reddening effects) 1 = Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3 = Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5 = Red (ex. Munsell 2.5R 4/8) 7 = Dark Red (ex. Munsell 10RP 4/8) 9 = Purple (ex. Munsell 5RP 5/8)			1 Silk Color 2.5GY8/6		
2.5GY8/6			2.5GY8/6		
6b. EAR (Husked Ear Data):			Mean		
Standard Deviation	Sample Size		Standard Deviation	Sample Size	
17.3	45	cm Ear Length	17.5	30	cm Ear Length
36.6	45	mm Ear Diameter at mid-point	38.6	30	mm Ear Diameter
091.2	45	gm Ear Weight	106.8	30	gm Ear Wt
12.8	30	Number of Kernel Rows	15.1	30	No. Kernel Rows
23.3	30	Number of Kernels per Row	29.6	30	No. Kernels per Row
07.6	45	cm Shank Length	06.8	30	cm Shank Length
7. KERNEL (Dried):			Mean		
Standard Deviation	Sample Size		Standard Deviation	Sample Size	
10.9	15	mm Kernel Length	10.4	15	mm Kernel Length
07.9	15	mm Kernel Width	07.7	15	mm Kernel Width
2 Hard Endosperm Color 1 = White (ex. Munsell Code 5Y 9/1 or 2.5Y 8.5/2) 2 = Yellow (ex. Munsell Code 2.5Y 8/10 or 7.5YR 7/14) 3 = Other (specify _____)			2 Hard Endosperm Color 2.5Y8/10		
1 Endosperm Type: 1 = Normal Starch 3 = Waxy Starch 5 = High Lysine 7 = Other _____			1 Endosperm Type		
2 = High Amylose Starch 4 = High Protein 6 = High Oil					
33.4	15	gm Weight per 100 Kernels (unsized sample)	33.4	15	gm Kernel Wt
2.4			1.7		
8. COB:			Mean		
Standard Deviation	Sample Size		Standard Deviation	Sample Size	
20.4	45	mm Cob Diameter at mid-point	22.6	30	mm Cob Diameter
4 Cob Color 1 = White (ex. Munsell 5Y 9/1 or 2.5Y 8.5/2) 2 = Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 3 = Red (ex. Munsell 2.5R 4/8 or 10RP 4/8) 4 = Other (describe _____)			4 Cob Color 2.5YR4/6		
2.5YR4/6			Reddish Brown		
9. DISEASE RESISTANCE of the variety per se: Name the disease, the causative organism, the races or strains, and the resistance rating (rate from 1 (most susceptible) to 9 (most resistant). Trials should be conducted with resistant and susceptible check varieties, and ensure that adequate disease pressure is present in the trial (such as with inoculations or heavy disease pressure). EXAMPLE: 7 Helminthosporium Leaf Spot (<i>Bipolaris zeicola</i>) Race 2_			DISEASE RESISTANCE of the comparison variety per se: Rate the same diseases as tested for the application variety.		
5 Eyespot (Kabatiella zeae) 6 Gray Leaf Spot (Cercospora zeae-maydis) 8 Northern Leaf Blight (Exserohilum turcicum) Race 0 & 1 mix 5 Southern Leaf Blight (Bipolaris maydis)			5 Eyespot (Kabatiella zeae) 5 Gray Leaf Spot (Cercospora zeae-maydis) 3 Northern Leaf Blight (Exserohilum turcicum) Race 0 & 1 mix 3 Southern Leaf Blight (Bipolaris maydis)		
Application Variety Data			Comparison Variety Data		

Application Variety Data	MFx7805	Comparison Variety Data	NP2739
10. INSECT RESISTANCE of the variety per se: Name the insect, give its scientific name, and the resistance rating (rate from 1 (most susceptible) to 9 (most resistant). Trials should be conducted with resistant and susceptible check varieties, and ensure that adequate insect pressure is present in the trial (such as with inoculations or heavy insect pressure). EXAMPLE: European Corn Borer (<i>Ostrinia nubilalis</i>) 7 1st Generation (Typically Whorl Leaf Feeding)		INSECT RESISTANCE of the comparison variety per se: Rate the same insects as tested for the application variety.	
11. MOLECULAR MARKERS: (1 = data available but not supplied; 2 = data supplied) 1 Isozymes 1 RFLP's 1 RAPD's 1 SSRs 1 SNPs 1 Other (Specify) _____		11. MOLECULAR MARKERS 1 Isozymes 1 RFLP's 1 RAPD's 1 SSRs 1 SNPs 1 Other _____	
12. AGRONOMIC TRAITS: Please place hybrid performance data in Exhibit D if desire to report it. 1 ND 1 Kg/ha Yield of Variety Per Se (at grain maturity)		12. AGRONOMIC TRAITS 1 ND 1 Kg/ha Yield of Variety Per Se	
Application Variety Data		Comparison Variety Data	

REFERENCE S:

- Butler, D.R. 1954. *A System for the Classification of Corn Inbred Lines*. PhD Thesis. Ohio State University.
- Emerson, R.A., G.W. Beadle, and A.C. Fraser. 1935. *A Summary of Linkage Studies in Maize*. Cornell A.E.S., Mem. 180.
- Farr, D. F., G. F. Bills, G. P. Chamuris, A.Y. Rossman. 1989. *Fungi on Plant and Plant Products in the United States*. The American Phytopathological Society. St. Paul, MN.
- Inglett, G. E. (Ed.) 1970. *Corn: Culture, Processing, Products*. Avi Publishing Company, Westport, CT.
- Jugenheimer, R. W. 1976. *Corn: Improvement, Seed Production, and Uses*. John Wiley & Sons, New York.
- McGee, D. C. 1988. *Maize Diseases*. APS Press. St. Paul, MN. 150 pp.
- Munsell Color Chart for Plant Tissues. Macbeth. P.O. Box 230, Newburgh, NY 12551-0230.
- The Mutants of Maize*. 1968. Crop Science Society of America, Madison, WI.
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- Sprague, G.F., and J.W. Dudley (Editors). 1988. *Corn and Corn Improvement*. Third Edition. Agronomy Monograph 18. ASA, CSSA, SSSA, Madison, WI.
- Stringfield, G.H. *Maize Inbred Lines of Ohio*. Ohio A.E.S., Bul. 831. 1959.
- UPOV publications can be accessed at http://www.upov.int/en/publications/tg_10m/tg_index.html (look for "maize")
- U. S. Department of Agriculture. 1936. 1937. Yearbook.

COMMENTS: (e.g., state how heat units were calculated, report any traits not listed on the form, and/or where data was collected. Continue in Exhibit D.)

The typical Heat Units calculation described in the exhibit C instructions was used in this exhibit.

7. Kernel data, for line applying for plant variety protection, taken using seed from same seed lot as that sent to deposit. All other data trial location and date listed above.

5. Tassel- Glume: Application variety - green with purple stripes. Glume: Comparison variety - green with purple stripes

Comparison variety used: Syngenta Inbred line , NP2739, US Patent 7,390,944.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E

STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (Include area code)
	7. PVPO NUMBER	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☐ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☐ YES ☐ NO

10. Is the applicant the original owner? ☐ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT F
DECLARATION REGARDING DEPOSIT**

NAME OF OWNER (S) Syngenta Crop Protection AG	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) Schwarzwaldallee 215 Basel, Switzerland, 4058	TEMPORARY OR EXPERIMENTAL DESIGNATION VARIETY NAME MFX7805
NAME OF OWNER REPRESENTATIVE (S) Dwight Bostwick	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) Syngenta Seeds Inc. 317 330th St. Stanton, MN 55018	FOR OFFICIAL USE ONLY PVPO NUMBER

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.



Signature

2-25-13

Date